

**ENCYCLOPEDIA AMERICANA**

VOLUME 19

Meyer to Nauvoo

T H E E N C Y C L O P E D I A  
**AMERICANA**  
I N T E R N A T I O N A L E D I T I O N

COMPLETE IN THIRTY VOLUMES  
FIRST PUBLISHED IN 1829



GROLIER INCORPORATED

International Headquarters: Danbury, Connecticut 06816

COPYRIGHT © 1991 BY GROLIER INCORPORATED

COPYRIGHT © BY GROLIER INCORPORATED:  
1990, 1989, 1988, 1987, 1986, 1985, 1984, 1983,  
1982, 1981

COPYRIGHT © BY AMERICANA CORPORATION:  
1980, 1979, 1978, 1977, 1976, 1975, 1974, 1973,  
1972, 1971, 1970, 1969, 1968, 1967, 1966, 1965,  
1964, 1963, 1962, 1961, 1960, 1959, 1958, 1957,  
1956, 1955, 1954, 1953, 1952, 1951, 1950, 1949,  
1948, 1947, 1946, 1945, 1944, 1943, 1942, 1941,  
1940, 1939, 1938, 1937, 1936, 1932, 1931, 1929,  
1927

COPYRIGHT © BY ENCYCLOPEDIA AMERICANA CORPORATION:  
1924, 1922, 1920, 1918

COPYRIGHT © PHILIPPINES BY GROLIER INTERNATIONAL, INC.:  
1991, 1990, 1989, 1988, 1987, 1986, 1985, 1984, 1983, 1982,  
1981, 1980, 1979, 1978, 1977, 1976, 1975, 1974, 1973, 1972

COPYRIGHT © REPUBLIC OF CHINA BY GROLIER INTERNATIONAL, INC.:  
1991, 1990, 1989, 1988, 1987, 1986, 1985, 1984, 1983, 1982,  
1981, 1980, 1979, 1978, 1977, 1976, 1975, 1974, 1973, 1972

All rights reserved. No part of this book may be reproduced or transmitted in any form by any means electronic, mechanical, or otherwise, whether now or hereafter devised, including photocopying, recording, or by any information storage and retrieval system without express written prior permission from the publisher.

**Library of Congress Cataloging in Publication Data**  
Main entry under title:

The Encyclopedia Americana—International Edition  
p. cm.

“First published in 1829.”

Includes bibliographical references and index.

ISBN 0-7172-0122-8

I. Encyclopedias and dictionaries. I. Grolier Incorporated.

AE5.E333 1991 90-23041

031—dc20 CIP

PRINTED AND MANUFACTURED IN THE U.S.A.

**MEYER**, mī'ər, **Adolf** (1886–1950), American psychiatrist, who was one of the foremost psychiatrists in the United States in the first half of the 20th century. He was born in Niederweningen, Switzerland, on Sept. 13, 1866, and received his M. D. from the University of Zürich in 1892. In that year, Meyer emigrated to the United States, where he accepted a position as pathologist at the Illinois Eastern Hospital for the Insane in Kankakee, Ill. From 1895 to 1910 he was the chief pathologist at the Worcester (Mass.) Insane Hospital, director of pathology for the Pathological Institute of the New York State Hospital Service, and professor of psychiatry at Cornell University Medical School.

In 1910, Meyer was appointed to Johns Hopkins University, where he served as a professor of psychiatry and director of the Henry Phipps Psychiatric Clinic until his retirement in 1941. Under his leadership, the Phipps Clinic became the most important center in the world for training psychiatrists. Meyer died in Baltimore, Md., on March 17, 1950.

Meyer was noted as an advocate of psychobiology, which views "the whole individual in action." Meyer also introduced into American psychiatry the practice of compiling case histories, including data on hereditary and environmental factors, social and economic factors, and conscious and unconscious factors. With Clifford W. Beers he began, about 1908, the mental hygiene movement that aimed at the prevention of psychopathological ills by corrective social and individual measures. Meyer also emphasized the soundness of common sense—a fact that justified engaging laymen for work in community mental health. His writings appear in *Collected Papers* (1950–1952) and *Psychobiology* (1957).

**MEYER**, mī'ər, **Conrad Ferdinand** (1825–1898), Swiss author. He was born in Zürich on Oct. 11, 1825, into a wealthy family. He studied law, but in the 1850's, after being hospitalized because of a nervous disorder, he changed to a career as a writer and poet. It was not, however, until 1871, with the publication of the verse narrative *Hutten's letzte Tage*, which he considered his "first" work, that Meyer achieved success.

After *Engelberg* (1872), another verse narrative, Meyer turned to prose narratives, which were frequently studies of the psychological forces that motivated historical personages. *Der Heilige* (1880), about the conflict between Thomas Becket and King Henry II of England, is regarded as the most important of these. Others included *Die Versuchung des Pescara* (1887) and *Angela Borgia* (1891). Meyer's shorter poetry was collected in *Gedichte* (1882). He was also noted for his well-crafted short stories.

In 1892, Meyer suffered a complete nervous collapse, from which he never made a complete recovery. He died in Kilchberg, near Zürich, on Nov. 28, 1898.

**MEYER**, mī'ər, **Lothar** (1830–1895), German chemist, who discovered a periodic classification of the elements. Julius Lothar Meyer was born in Varel, Oldenburg, Germany, on Aug. 19, 1830. He received an M. D. from the University of Warzburg in 1854 but soon developed a greater interest in chemistry. Meyer taught at several institutions before serving as professor of chemistry at the University of Tübingen from 1876 to 1895. He died in Tübingen on April 11, 1895.

In Meyer's early work, he found that oxygen and carbon monoxide were taken up by the blood in a simple molecular ratio, and he recognized that both were held in the blood by some type of chemical union. Meyer's reputation was made by his book *Die modernen Theorien der Chemie* (1864), which discusses relationships between atomic weights and properties of elements. He discovered a periodic law independently of the Russian chemist D. I. Mendeleev in 1869. In doing so, he plotted atomic volume as a function of atomic weight, clearly showing the periodic relationship of the elements. However, Meyer did not publish his results until 1870, a year after Mendeleev.

**MEYER**, mī'ər, **Viktor** (1848–1897), German chemist, who did pioneering work in organic and inorganic chemistry. He was born in Berlin on Sept. 8, 1848. After receiving his Ph. D. from the University of Heidelberg in 1867, he served as professor of chemistry at the Zürich Polytechnic Institute (1872–1885), the University of Göttingen (1885–1889), and the University of Heidelberg (1889–1897). He died in Heidelberg on Aug. 8, 1897.

Meyer made a variety of contributions to chemistry. In 1874 he discovered the nitro compounds of the aliphatic series. In 1877 he described his method for determining the density of vapors. He refined his method so that densities of vapors could be determined at high temperatures, and this became known as the Meyer method. In 1882 he discovered the series of organic compounds known as oximes. This began his study of the isomerism of oximes and led to his introduction of the term "stereochemistry." In 1883 an accident during a classroom demonstration led Meyer to the discovery of thiophene, a sulfur compound. From 1894 until his death Meyer studied steric hindrance, a concept he introduced.

**MEYERBEER**, mī'ər-bār, **Giacomo** (1791–1864), German composer, whose major work is the opera *Les Huguenots*. Although a German, he is regarded as the father of French grand opera.

**Early Career.** Meyerbeer, whose real name was Jacob Liebmann Beer, was born in Berlin on Sept. 5, 1791, into a family of Jewish bankers. As a child, he became a remarkable pianist. His oratorio *Gott und die Natur* was performed in Berlin in 1811, and his first opera, *Jephthas Gelübde*, in Munich in 1812. His second opera, *Wirt und Gast*, was well received when presented in Stuttgart in 1813.

In 1815, Meyerbeer went to study in Italy, where he became acquainted with the ways of Italian opera and Italian singing. Influenced by Rossini, he composed six operas to Italian librettos. *Il Crociato in Egitto*, the last of these, was a resounding triumph in Venice in 1824.

Meyerbeer then spent some years in Paris, perfecting his knowledge of French opera, the French language, and, above all, French declamation. The result of this study was the opera *Robert le Diable*, produced at the Paris Opéra in 1831. This spectacular work, one of the greatest of all operatic successes, set the French taste for the grandest of all grand opera.

**Later Career.** *Robert le Diable* was followed by Meyerbeer's masterpiece, *Les Huguenots*, presented at the Paris Opéra in 1836. Coolly received at first, *Les Huguenots* became even more

popular than *Robert le Diable*, and, when it was staged in Berlin in 1842, Meyerbeer was appointed general music director there by Frederick William IV of Prussia. Thereafter, Meyerbeer divided his time between Berlin and Paris.

*Ein Feldlager in Schlesien* (1844), an opera in German by Meyerbeer, was relatively unsuccessful until Jenny Lind sang the role of the heroine, Vielka, in 1847. *Le Prophète*, the third of Meyerbeer's French grand operas, was sung at the Paris Opéra in 1849. Five years later the Opéra-Comique staged his *L'Étoile du nord*, for which parts of the score had been taken from *Ein Feldlager in Schlesien*. The Opéra-Comique also produced *Le Pardon de Ploërmel* (soon better known as *Dinorah*) in 1859.

From 1838, Meyerbeer had been working on *L'Africaine*, which he was preparing for production when he died, in Paris, on May 2, 1864. The work was triumphantly staged at the Paris Opéra the next year.

**Assessment.** Meyerbeer's purely musical gifts were notable, if eclectic, and his mastery of technique was complete. But his place in the world of opera depended on his ability to create—with the help of the librettist Eugène Scribe—theatrical spectacles that were vehicles for great singers. However, taste in opera changed, and, in the beginning of the 20th century, most of Meyerbeer's work, except for *Les Huguenots*, was seldom included in the standard repertoire.

HERBERT WEINSTOCK<sup>o</sup>  
Coauthor of "Men of Music"

**MEYERHOF**, mī'ər-hōf, **Otto** (1884–1951), German physiologist and biochemist, who was awarded the 1922 Nobel Prize in medicine for his discovery of the origin and fate of lactic acid in muscle. His pioneering work threw considerable light on the chemistry and thermodynamics of muscular contraction, intermediate enzymatic steps of carbohydrate metabolism in muscle and yeast, and cellular oxidations in general.

Meyerhof was born in Hannover, Germany, on April 12, 1884. After receiving his doctorate in medicine from the University of Heidelberg in 1909, he developed an interest in psychology and philosophy. He joined the department of physiology at Kiel University in 1918 and in 1924 became director of the physiology division of the Kaiser Wilhelm Institute for Biology in Berlin-Dahlem. In 1929 he became director of the physiology division of the Kaiser Wilhelm Institute for Medical Research in Heidelberg. In 1930 he published his classic monograph *Die Chemischen Vorgänge in Muskel...* (*Chemical Processes in Muscle...*). In 1938–1940 he worked at the Institute of Physicochemical Biology in Paris. He went to the United States in 1940 and continued his research activities at the University of Pennsylvania. He died in Philadelphia, Pa., on Oct. 6, 1951.

SEVERO OCHOA<sup>o</sup>  
Nobel Prize Winner in Physiology or Medicine  
New York University College of Medicine

**MEYERHOLD**, mī'ər-hōlt, **Vsevolod** (1874–1942), Russian stage director, who for 20 years was a major influence in the Soviet theater. He was born in Penza, Russia, on Jan. 28, 1874. He was a student of Vladimir Nemirovich-Danchenko at the Musical-Dramatic School of the Moscow Philharmonic Society. In 1898, when Stanislavsky and Nemirovich-Danchenko founded the Moscow

Art Theater, Meyerhold was asked to join. He remained with the company for four years, learning Stanislavsky's realistic style of acting.

In 1902, Meyerhold founded the Society of New Drama, which performed in the provinces. It was at this time that he rejected realism for avant-garde symbolist acting. He showed so much ability as a teacher of acting that Stanislavsky invited him to head the Moscow Art Theater's experimental studio, organized in 1905. There, in the fashion of Russian acting studios, Meyerhold rehearsed Maurice Maeterlinck's *La Mort de Tintagiles* for months, although it was never shown to the public.

In 1906, probably on the strength of this production, the actress Vera Kommissarjevskaya invited Meyerhold to direct her at her theater in St. Petersburg (now Leningrad). This gave him a professional opportunity to put into practice the symbolism and stylization he had been using in the Moscow Art Theater studio. In his "abstract" theater he reduced the actor to the role of a puppet, thus anticipating Gordon Craig's conception of the actor as a "super-marionette," dispensing with the human element entirely. Meyerhold's dehumanization of the actor led to an inevitable break with Kommissarjevskaya. Between 1913 and 1917 he staged some brilliant productions in St. Petersburg, most notably Mikhail Lermontov's *Masquerade* in March 1917.

When the Bolsheviks came to power in October 1917, Meyerhold joined the Communist party and became one of the Soviet Union's leading theatrical personalities—a favored director who had his own theater in Moscow. He was the first to present Soviet plays, beginning with Vladimir Mayakovsky's *Mystery-Bouffe* in 1918.

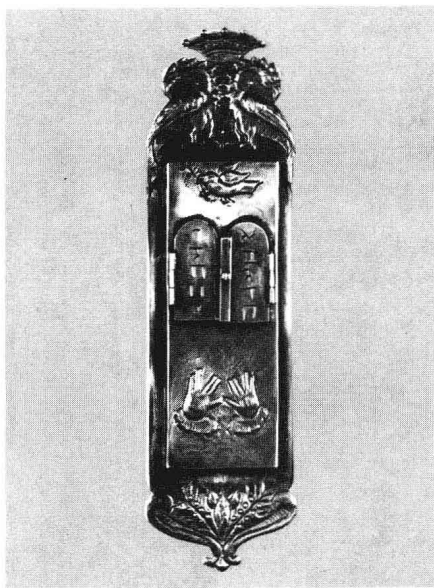
In the late 1930's, however, Meyerhold fell into official disfavor because he deviated from the party line and dropped Soviet plays from his repertoire. His theater was closed in 1938, and he was arrested and disappeared in 1939. His wife, the actress Zinaida Raikh, subsequently was found stabbed to death in their apartment. The circumstances of Meyerhold's own death, reportedly in March 1942, are unknown.

GEORGE FREDLEY, Coauthor of  
"A History of the Theatre"

**MEYNELL**, men'əl, **Alice** (1847–1922), English poet and essayist. Alice Christiana Gertrude Meynell, whose maiden name was Thompson, was born in Barnes, Surrey, on Sept. 22, 1847. She spent much of her childhood in Italy, was educated by her father, and about 1872 converted to Roman Catholicism. Her first book of poems, *Preludes*, was published in 1875. In 1877 she married Wilfrid Meynell, a journalist.

The Meynells edited several magazines, notably the Catholic *Weekly Register* (1881–1895) and the monthly *Merry England* (1883–1895). Mrs. Meynell wrote for these publications and for other periodicals, including the *Pall Mall Gazette*, to which she contributed a weekly column in 1894. These writings were published in various essay collections, among them *The Rhythm of Life* (1893), *The Colour of Life* (1896), *The Children* (1897), and *Second Person Singular* (1921).

Mrs. Meynell's delicate and gentle poetry, suggestive of that of Elizabeth Barrett Browning and Christina Rossetti, appeared in volumes published in 1893, 1896, 1902, and 1917. She died in London on Nov. 27, 1922.



COLLECTION, THE JEWISH MUSEUM, N. Y.

A mezuzah on the doorpost of a Jewish home is a reminder of God's presence.

**MEZUZAH**, mə-zōō-zä', a parchment scroll encased in a small, cylindrical container attached to the upper right doorpost (as one enters) in Jewish homes. The case may be made of wood, metal, or glass. "Mezuzah" is the Hebrew word for "doorpost."

Inscribed on the parchment are biblical injunctions to love God and obey his commandments, taken from Deuteronomy 6:4-9 and 11:13-21 and known in prayer books as the *Shema*. On the reverse side is inscribed the Hebrew word *Shaddai*, meaning "Almighty." Devout Jews touch the mezuzah with their fingers and then kiss them upon entering or leaving a home. Small mezuzahs are commonly worn around the neck as amulets.

**MEZZO-SOPRANO**, met-sō-sə-pran'ō, the female singing voice intermediate between the contralto and the soprano voices. The mezzo-soprano voice usually has a range of about two octaves—from G below the staff to A above the staff in the treble clef. The mezzo-soprano voice is somewhat darker than the soprano voice, and it usually is throatier and less brilliant.

**MEZZOTINT**, met'sō-tint, a kind of print, as well as the intaglio printing technique to produce it, that achieves gradations of tone. See ENGRAVING.

**MFEKANE**, um-fə-ka'nā, a Zulu word meaning forced migration, is applied specifically to the wars that devastated most of the Bantu-speaking farming communities of southeastern Africa in the 19th century. The peak period was between 1816 and 1828, when Shaka (Chaka), founder of the Zulu kingdom, created a full-time, disciplined professional army that carried out annual campaigns against his neighbors, killing the local inhabitants and looting their cattle.

The Zulu campaigns sparked off secondary wars, as survivors of disrupted or threatened communities fled in all directions. Some organized as military bands, conquered the peoples

in their paths, and set up a series of military states. Under the leadership of Mzilikazi, the Ndebele (Matabele) devastated much of the modern Transvaal before they carved out a kingdom in the country of the Shona north of the Limpopo River. Under Zwangendaba the Ngoni fought their way north until they settled in modern Tanzania, 2,000 miles (3,200 km) from their starting point.

Thousands of people were killed in these wars. Still more were driven from their homes and reduced to starvation. In the mountainous country west of Zululand, Moshweshwe (Moshoeshoe) rallied survivors of the wars and created the kingdom of Lesotho.

LEONARD M. THOMPSON, *Yale University*

**MHO**, mō, a unit of electrical conductance. The conductance of a conductor in mhos is the reciprocal of its resistance in ohms. The mho is an alternative name for the *siemens*, which is the unit of conductance in the International System (SI), or metric system, of Units.

**MI FEI**, mē fā (1051-1107), also known as Mi Fu, was a Chinese painter, calligrapher, and art critic of the Sung period. Born in Hsiangyang, Hupei province, he acquired from his father a love of calligraphy and of old works of art. From the age of 20 he was employed in the civil service, changing posts frequently and traveling widely, both in his official capacities and for the pleasure of meeting with fellow artists, writers, and connoisseurs. His official career was hampered, however, by his outspokenness and by his eccentric habits, which included dressing in a style that was centuries out of date.

During his lifetime, Mi was admired for his perceptive though sometimes caustic criticism, for his distinguished art collection, and for his superb calligraphy. His painting, which was unorthodox, was ignored by the emperor Hui Tsung, an artist and connoisseur in his own right, and Mi's reputation as a great painter did not mature until many years after his death. No extant paintings can be identified with certainty as his. What is known of his painting comes from written descriptions of it and the work of his followers, notably his son Mi Yu-jen.

In an effort to reinterpret the style of Tung Yüan, the 10th century founder of the "southern school" of landscape painting, Mi Fei created a new style. Virtually abandoning the drawn line, he built up forms such as rocks, mountains, and trees by means of short, horizontal blobs of ink, afterward called "Mi dots," applied to paper or silk with the side of the brush. With these dots massed in varying densities, and through color gradation, he produced impressions of rich, moist landscapes, capturing the atmospheric effects of light and air on natural forms. His style—personal, intimate, impressionistic—is embodied in three unauthenticated works: scrolls in the Nakamura Collection (Tokyo), the National Palace Museum (Taipei), and the Freer Gallery (Washington). In these, the heavy mists and clouds, with conical or softly rounded hills protruding through them, are typical of landscapes in southern China and the Yangtze region.

Mi Fei's methods were easily imitated and widely adopted by painters of later generations, especially by amateurs. But only seldom did his followers display the masterful conveyance of personal vision that he is said to have achieved.



GEORG GERSTER, FROM PHOTO RESEARCHERS

Downtown Miami (foreground), with Port of Miami terminal in Biscayne Bay. Across the bay is Miami Beach.

**MIAMI**, mī-am'ē, is a city in southeastern Florida, the most southerly major city in the continental United States. It is located on the Atlantic coast, some 2° north of the Tropic of Cancer, and has a warm subtropical marine climate, with an average annual temperature of about 75° F (24° C). Because of its mild weather, ocean setting, and extensive resort facilities, Miami, together with its environs, is one of the great tourist centers of the world.

**Miami and Environs.** Miami, with an area of 54 square miles (140 sq km), fronts on Biscayne Bay, an arm of the Atlantic Ocean created by islands that constitute the northern reaches of the Florida Keys. The Miami River, which is connected by canal with Lake Okeechobee to the northwest, bisects the city. Miami is divided into four parts—Northwest, Northeast, Southwest, and Southeast—formed by the intersection of Flagler Street, running east and west, and Miami Avenue, running north and south.

Miami is the seat of Dade county, which is coextensive with the Miami metropolitan area, or Greater Miami. Greater Miami consists of 27 independent municipalities and of large unincorporated areas, some of which are heavily populated. Among the communities north of Miami are North Miami Beach, North Miami, and Miami Shores. Hialeah and Miami Springs are to the west, and Coral Gables, South Miami, and Homestead are to the south. On islands offshore, east of Miami across Biscayne Bay, are the luxurious resorts of Miami Beach, Surfside, and Bal Harbour. These communities, as well as fashionable Key Biscayne to the south, connect with the mainland by causeways.

Dade county covers 2,408 square miles (6,237 sq km), of which 354 square miles (917 sq km) is water. The western half of the county forms part of the Everglades National Park, one of the nation's most extensive wilderness preserves.

**People.** Greater Miami is predominantly white, but an increasing percentage of the city's population is nonwhite, mostly black, with a sprinkling of other races. More than a quarter million persons of Cuban origin live in and around Miami. This group has expanded greatly from an influx of refugees both after Castro came to power in Cuba in 1959 and during Castro's release of persons seeking to leave Cuba in 1980. A large segment of the population—about 14% of the total—consists of people 65 years of age or older, many of whom retired to Florida from the northern United States. In Miami Beach nearly half the residents are in this age group.

The city of Miami had a population of 1,681 in 1900. By 1960 it had 291,688; by 1970, 334,859; and by 1980, 346,865. Greater Miami rose in population from 935,047 in 1960 to 1,267,792 in 1970 and to 1,625,781 in 1980.

**Sports and Recreation.** Few places offer such a variety of sports, both professional and non-professional, as the Miami area. There are extensive opportunities for aquatic activities—swimming, water skiing, scindiving, fishing, and boating—as well as for golf (over 40 courses), tennis, shuffleboard, bowling, and other sports.

Among professional sports there are Thoroughbred racing (at Hialeah and Calder tracks and at Gulfstream track in Hallandale, just north of the Dade county line), dog racing, and jai alai. The Miami Dolphins of the National Football League play at Joe Robbie Stadium, northwest of downtown Miami. The Orange Bowl is the site of the Orange Bowl Classic, a championship intercollegiate football game, held annually on New Year's Day, and the North-South College All-Star Game. The Miami Heat of the National Basketball Association plays home games at the Miami Arena. Marine Stadium, on Rickenbacker Causeway leading to Key Biscayne, is for spectators of powerboat racing in Biscayne Bay.

Miami has a professional symphony orchestra and ballet company, which perform in the Dade County Auditorium. Various concert series feature visiting artists from the United States and abroad. There are also professional theater, at the Coconut Grove Playhouse, and amateur theatrical productions.

**Places of Interest.** Greater Miami has a number of art museums. Villa Vizcaya, an Italian Renaissance-style palazzo built by industrialist James Deering, houses the Dade County Art Museum. On the campus of the University of Miami at Coral Gables is the Lowe Art Museum, with paintings from the Kress Collection. The Bass Museum is in Miami Beach. Specialized museums include the Historical Museum of Southern Florida, the Holbrook Antique Arms and Gun Museum, and the Museum of Science, with a planetarium.

There are numerous attractions devoted to nature. The Everglades National Park offers a unique opportunity to observe the flora and fauna of an unspoiled wilderness, as does the Grossman Hammock State Park, near Homestead. Organized animal refuges include the Crandon Park Zoo, on Key Biscayne; Monkey Jungle and Parrot Jungle, both south of Coral Gables; and the Seaquarium, with marine shows, on Rickenbacker Causeway. Tropical plants and flowers are featured at the Miami Beach Garden Center and Conservatory; Orchid Jungle and the Redland Fruit and Spice Park, in the Homestead area; and the Fairchild Tropical Gardens, in south Coral Gables. There are also many public parks with a profusion of trees and flowers. Some of these have facilities for camping and various sports activities.

**Economy.** Tourists—over 10 million per year—generate more than 60% of the Miami area's economic activity. To serve these visitors, nearly 10% of the work force is employed by hotels and motels, restaurants, and recreational facilities. Various other industries, such as construction and wholesale and retail suppliers, greatly depend, directly or indirectly, on the tourist trade. Military installations, including the Homestead Air Force Base, also contribute to the economy.

Greater Miami has considerable light manufacturing, notably in the garment industry. It is also an important agricultural region, producing tomatoes, avocados, mangoes, and beans. Although Dade county is south of Florida's great citrus belt, there is a large lime crop.

**Transportation.** Miami is a major transportation center. There are a number of airports in the area, of which the most important is the Miami International Airport, on the western edge of the city, with flights to Latin America and Europe, as well as to cities in the United States. Direct passenger rail service is available to the northeast and midwest United States. Interstate bus lines also serve the city, which is connected with the Florida turnpike and the interstate highway system.

Situated on the Atlantic Intracoastal Waterway, Miami is a major seaport for both cargo and cruise lines. In 1960 the Port of Miami, administered by the Dade County Seaport Commission, began the long-range development of a deep-water marine terminal in Biscayne Bay. In addition to extensive cargo and passenger facilities, the terminal is used as a base by the National Oceanic and Atmospheric Administration and the Rosenstiel School of Marine and Atmospheric Sciences of the University of Miami.

**Education.** The Dade county public school system is the sixth largest in the United States, with about 250,000 pupils and more than 10,000 teachers. There are also many nonpublic schools, with an enrollment of some 43,000.

The leading institution of higher learning in Greater Miami is the University of Miami, whose main campus is at Coral Gables. The Miami-Dade Junior College has three campuses—one in downtown Miami and two outside the city proper, north and south. Among other colleges in the area are the state-supported Florida International University and Barry College and Biscayne College, both Roman Catholic. Florida Memorial College is a Baptist-affiliated school.

**Government.** The city of Miami has a commissioner-manager form of government. The mayor is elected to a two-year term, and four commissioners serve four-year terms. The nine-member Dade County Board of Commissioners also plays a major role in city government. It heads a metropolitan county government, called Metro, which acts to coordinate municipal activities.

**History.** The name Miami probably derived from *Mayami*, an Indian word meaning "Big Water." Maps of the 16th century show an Indian village at what is now Bayfront Park in downtown Miami. Fort Dallas, near the mouth of the Miami River, was built in 1836, during the Seminole Indian wars. In 1896, Henry M. Flagler, through the urging of the pioneer settler Julia Tuttle, extended the East Coast Railroad to Miami. The city was incorporated that year, and visitors began to flock to the area. Miami Beach was incorporated in 1915.

During the early 1920's, Miami was the scene of a great land boom. However, in 1926, as a result of a severe hurricane and financial panic, the boom collapsed, leaving real estate interests with acres of swampland and no buyers. Despite this setback the region continued to grow, as land was drained and streets and parks laid out. After World War II there was a phenomenal increase in hotel building, and the Miami area became the great metropolitan and tourist center it is today. However, growth has brought problems. An influx of hundreds of thousands of Cubans in the 1960's and in 1980 created one set of problems, while increased racial tension, growing out of alleged police mistreatment of blacks, culminated in severe rioting in 1980.

**MIAMI, University of,** *mī-am'ē*, a private coeducational institution of higher learning in Coral Gables, Fla. It was chartered in 1925 and opened in 1926. Bachelor's, master's, and doctor's degrees are given.

The University of Miami consists of the college of arts and sciences and the schools of business administration, education, engineering, music, nursing, law, and medicine. Other facilities include the Center for Advanced International Studies, the Dorothea H. and Lewis Rosenstiel School of Marine and Atmospheric Science (on Virginia Key), and the Institute of Molecular Evolution. The division of continuing education provides undergraduate and graduate study for evening and part-time students. The medical school and continuing education division are in Miami.

The university library has special collections of Russian and Soviet materials, works by Colombian authors, and materials on Florida, the West Indies, and contemporary Cuba. The enrollment of full-time students is about 12,000.





SAM FALK, FROM MONKMEYER

Gleaming luxury hotels line the oceanfront at Miami Beach, one of the nation's favorite playgrounds.

**MIAMI BEACH**, *mī-am'ē*, is one of the leading resort cities in the United States. It is situated on the Atlantic Ocean, in southeast Florida, in Dade county. Miami Beach comprises a number of islands lying parallel to the city of Miami on the mainland, from which it is separated on the west by Biscayne Bay. Four causeways for automotive traffic connect it with Miami, where air, rail, and bus terminals are located.

Because of its subtropical marine climate and its extensive tourist and recreational facilities, Miami Beach is a popular vacation center for visitors from the northern United States and Canada. It offers abundant opportunities for swimming, fishing, boating, golfing, tennis, and other warm-weather sports. Professional sports in the Greater Miami area include football, jai alai, horse racing, and dog racing. Within easy reach of the city are the Everglades National Park, the Florida Keys, and Lake Okeechobee.

Parks and golf courses are interspersed throughout Miami Beach. Collins Avenue, the main thoroughfare, runs north and south along the ocean. The major hotels and motels, with their nightclubs and luxurious accommodations, line the avenue. To the west, on the many islands that form the city, are the residential areas,

with tropical gardens and Spanish-Mediterranean architecture. Many fashionable stores and shops are located on Lincoln Road, most of which has been made into a pedestrian mall. Other points of interest in Miami Beach proper include the Bass Art Museum, the Miami Beach Garden Center and Conservatory, and the Miami Beach Auditorium and Convention Hall.

Originally, Miami Beach was a desolate stretch of sand and swamp. In the early 1900's, the area was cleared and fill was pumped from Biscayne Bay to create new land. The city was incorporated in 1917 and rapidly expanded. An extensive building program was undertaken in the mid-1970's, resulting in a new municipal building, a multimillion-dollar youth center, and a renovated theater for the performing arts. It has a council-manager form of government. Population: 96,298.

**MIAMI INDIANS**, *mī-am'ē*, an Algonkian tribe originally inhabiting Wisconsin and, later northern Indiana and northern Illinois, where they founded a settlement at the present site of Chicago. They subsequently expanded to Ohio. The name Miami may have come from the Chippewa *omaugeg*, "peninsula people." European colonists called them the Twightwees, from their own name *twah twah*, the cry of the crane. Confusion of this with *tawa*, "naked," gave rise to the misnomer Naked Indians. The Wea and Piankashaw, once considered as bands within the Miami, are now regarded as individual tribes.

Under their chief Little Turtle and other leaders, the Miami resisted the advance of the whites into their various lands. In 1840 they were forced to sell their holdings in Indiana and Illinois, though one band remained and still lives in the vicinity of Peru, Ind. Most of the tribe was removed to Kansas, and later to Oklahoma, where they were settled on a reservation in 1867. They joined the Peoria Indians in a confederation, and some 350 are on the rolls of the Quapaw Subagency, where their lands are individually owned. One hostile band of Miami was removed to California, where their descendants live on two small reservations.

FREDERICK J. DOCKSTADER  
Former Director, Museum of the  
American Indian, Heye Foundation

**MIAMI UNIVERSITY**, *mī-am'ē*, is a coeducational state institution of higher learning in Oxford, Ohio. Endowed with federal land leased to Ohio, it was chartered in 1809 and opened in 1824. There are branch campuses at Hamilton and Middletown. The university offers bachelor's, master's, and doctor's degrees. The branch campuses offer associate degrees in technical nursing.

Miami University consists of the college of arts and sciences and schools of business administration, applied science, education, and fine arts. Among special academic programs are those in urban, black, and American studies, in international studies, and in foreign affairs. Dual-degree programs are conducted with the University of Cincinnati (music), Ohio State University (including sciences, economics, and geography), Massachusetts Institute of Technology (engineering), Duke University (forestry), University of Cleveland (medical technology), and Northwestern University (physical therapy). Library holdings include collections on Ohio Valley history and folklore. Enrollment is about 15,000.

**MIANTONOMO**, mī-an-tō-nōmō (died 1643), was an American Indian chief. A sachem of the Narragansett tribe of Rhode Island, he shared power with his uncle, Canonicus. In 1637 he helped the Massachusetts settlers defeat the Pequot Indians. The English authorities accused him several times of plotting against them, but he was cleared of the charges. In 1643, Uncas, a Mohegan sachem and his bitter rival, attacked his tribe. Miantonomo was captured and turned over to the English. Still distrusted by the whites, he was tried, found guilty, condemned to death, and turned over to Uncas, who killed him near Norwich, Conn. He was buried there and a monument placed on the site in 1841.

**MIAO**, myou, peoples of southern China, Laos, and the northern parts of Vietnam and Thailand. In Southeast Asia they are called Meo.

Generally the Miao live in isolated groups in remote mountain valleys, surrounded by unrelated peoples. In Southeast Asia, where they are relative newcomers from China, they often occupy the highest hilltops. The Miao cluster in villages with houses of usually simple construction, typically of bamboo or mud with thatched roofs. They grow corn, millet, buckwheat, and legumes on the surrounding slopes. When the soil is exhausted, the fields are abandoned and whole villages move. However, some of the Miao have adapted to permanent, wet-rice cultivation where suitable land is available.

Some linguists class the Miao and Yao languages as a separate branch of the Sino-Tibetan family. The word *miao* is of Chinese origin and formerly had the connotation of "barbarian." The Miao call themselves Hmong, Hmu, Hmung, and similar names. They are divided by variations in speech, dress, and customs into groups named for a characteristic of the women's traditional costume. The major groups are the Black, White, Red, Blue, and Flowery Miao.

Most of the roughly 3 million Miao live in China, where they are concentrated in Kweichow province. Under the Communist regime they have been organized in communes, and their exploitation by Chinese and Lolo landlords has ended. Educational facilities have been extended to them, with a Latin-alphabet Miao script.

The Miao are noted for their love of independence, and their legends emphasize heroism in battle. Large-scale Miao migration into Indochina, under Chinese pressure, began in the early 19th century. In Thailand, where many Miao grow and smuggle opium, they have resisted government control and have conducted guerrilla actions said to be Communist-inspired.

**MICA**, mī'kə, any of a large group of aluminosilicate minerals, each of which easily splits into very thin flexible sheets. Members of the mica group include muscovite, phlogopite, paragonite, biotite, lepidolite, and other minerals.

Muscovite and phlogopite have many industrial uses because of their perfect cleavage, flexibility, elasticity, high electrical insulating strength, and low heat conductivity. In the form of sheet mica, they are used as electrical and thermal insulation. In the form of scrap mica or finely ground mica, they are used in lubricants, paints, rubber, wallpaper, roofing, plastics, and Christmas tree "snow."

Spurred by a shortage of natural mica during World War II, the United States produced some

synthetic mica after the war. Generally, however, it has been cheaper to process natural mica than to produce synthetic mica.

**Types of Natural Mica.** Muscovite, so named because it once was used in Russia for glazing the windows of buildings, is a potassium aluminosilicate whose formula is  $KAl_2(AlSi_3O_{10})(OH)_2$ . It is colorless to pale gray, green, or brown and occurs in igneous rocks called pegmatites as well as in metamorphic and sedimentary rocks. It has a monoclinic crystal system, a hardness of 2.5 on the Mohs scale, and a density of 2.8 to 2.9. Phlogopite,  $KMg_3(AlSi_3O_{10})(OH)_2$ , a pale yellow to brown potassium-magnesium aluminosilicate, occurs in magnesium-rich rocks. Its properties closely resemble those of muscovite. Paragonite,  $NaAl_2(AlSi_3O_{10})(OH)_2$ , is a gray, green, or brown sodium aluminosilicate. Biotite,  $K(Mg, Fe)_3(AlSi_3O_{10})(OH)_2$ , is a black, brown, or green potassium-magnesium-iron aluminosilicate. Lepidolite,  $KLi_2(Si_4O_{10})(OH)_2$ , is a lilac or colorless potassium-lithium aluminosilicate.

**Mining and Production.** Mining requires great care because the mica crystals must be kept intact during extraction. The mined crystals are trimmed of rock, cut, split into plates, and then split further into sheets with a knife.

Leading producers of mica include India, Madagascar, Brazil, and the United States. Leading producing states include New Hampshire, North Carolina, and South Dakota.

**MICAH, Book of**, mī'kə, a book of the Old Testament, sixth of the Twelve "Minor" (shorter) Prophets. Micah, which means "Who is like Yah (God)," is also the name of a Hebrew prophet whose message is contained in the book. Micah is called the Moreshite (Micah 1:1; Jeremiah 26:18), from his native town, Moresheth, which was about 25 miles (40 km) southwest of Jerusalem. He was active in Judah in the late 8th century B. C., when Samaria in the Northern Kingdom had fallen to the Assyrians (721 B. C.) and Jerusalem in the Southern Kingdom was threatened by their attack.

**Content.** The book may be divided into two major parts, each introduced by a summons to a

Lustrous mica, an aluminosilicate mineral, splits readily into thin sheets that are flexible and elastic.

GRANT HEILMAN



particular audience to hear. The first part (chapters 1–5) is addressed to a universal audience of all nations. The section that contains chapters 1–3 begins and ends with the proclamation of divine punishment upon the two capital cities, Samaria in Israel (1:2–6) and Jerusalem in Judah (3:9–12). Micah sees doom descending upon the leaders (3:1–5), the wealthy oppressors who dispossess the poor of their land (2:1–5), and the priests and prophets who seek only financial gain (3:5–7; 11). He notes that in spite of his warnings, a false sense of security abounds in Jerusalem. “Is not Yahweh in our midst? No disaster shall come upon us” (3:11).

The central theme in chapters 4–5 is the restoration of Zion (Jerusalem), which will regain its former dominion (4:1–14; Isaiah 2:2–4). The “messianic” prophecy of the ruler who is to come from Bethlehem (5:2–6) is later paraphrased in Matthew 2:6 and in that book is applied to Jesus.

The second part of the book (chapters 6–7) is addressed to Israel (the whole Hebrew people). It rebukes them for their misdeeds and faithlessness to God. Micah 6:8 summarizes the ideal teaching of the Hebrew prophets: “What does the Lord require of you but to do justice, and to love kindness, and to walk humbly with your God?”

**Forms.** The Book of Micah exhibits a variety of rhetorical forms, which were originally independent speech units before they were written down in their present arrangement. One of the forms Micah occasionally used is the judgment speech, which typically has a two-part structure of accusation and announcement of judgment (3:9–11, accusation; 3:12, announcement).

Micah 1:8–16 takes the form of a lamentation for a past or an impending disaster. The prophet’s heated arguments with his opponents come to light in the disputation form (2:6–11). Micah introduces his judgment speech with the woe-cry (2:1–5; compare Isaiah 5:8–9), a rhetorical element originally at home in the funeral lament or the teaching of clan wisdom. Oracles of hope are found in chapters 4 and 5. A covenant lawsuit speech is 6:1–5, while 7:8–20 is a prophetic liturgy encompassing a variety of forms.

**Date and Structure.** The Book of Micah, like other prophetic books, reached its present form only after a long period of collecting and editing prophetic materials. The editorial superscription (1:1) suggests that Micah wrote the whole book and says that he prophesied during the time of Jotham, Ahaz, and Hezekiah, kings of Judah from 742 to 687 or 686 B. C. In fact only a part of the book—chapters 1–3 (less 2:12–13 and several editorial additions)—can be attributed to Micah. It indicates that he flourished for a shorter period, probably just before 721 to 701, when Assyrian forces under Sennacherib attacked Jerusalem (II Kings 18:13–16).

Chapters 4–5 represent a second collection of a much later date. They mostly reflect the situation during the Exile, after Judah fell to Babylon in 587 B. C. Chapters 6–7 form a third collection, ranging in time perhaps from the last years of Judah to the first decades of the 6th century. Some commentators think the book is arranged in a pattern of threat alternating with promise: chapters 1–3, threat; 4:1–5:9, promise; 5:10–7:6, threat; 7:7–20, promise.

GARY STANSELL  
St. Olaf College

**MICAWBER**, mi-kō'bər, **Wilkins**, a major character in Charles Dickens’ novel *David Copperfield*. Mr. Micawber lives on the brink of financial disaster and alternates between moods of depression and elation. One of Dickens’ memorable comic characters, Micawber is foolhardy and boastful but, withal, goodhearted and likable. Dickens’ father was the model for Mr. Micawber, and his mother for Micawber’s long-suffering and loyal wife, Emma.

**MICE.** See MOUSE.

**MICHAEL**, in Judaism and Christianity, is an archangel who wages war against evil. The name means “Who is like God?” Michael is mentioned in the Old Testament (Daniel 10:13, 21; 12:1) as the heavenly “prince,” or champion, specially charged to guard and defend the Jewish people. Many legends gathered about his name. He was said to have disputed with the devil about the body of Moses (Jude 9), whose whereabouts remained a great mystery for later generations (Deuteronomy 34:6).

In the New Testament (Revelation 12:7), Michael and his angels fought a war in heaven, conquered the “dragon” (Satan), and cast it down from the skies. For Christians this ancient myth is undoubtedly an allegory of the coming struggle between good and evil, God and Satan, light and darkness, Christianity and paganism. In Christian art, Michael is depicted with a sword fighting a dragon. In literature, as in the works of Dante and Milton, he is the first of the seven archangels recognized by Christian tradition.

Many churches have been dedicated to St. Michael the Archangel, who protects his people from such evils as plague, drought, famine, and tempest. He was believed to have appeared in the 5th century on Mt. Garganus in Italy, which became a medieval pilgrimage site. His feast day in both East and West is September 29. He is mentioned in the Koran with Gabriel.

FREDERICK C. GRANT

Formerly, Union Theological Seminary

**MICHAEL I** (died c. 845), Byzantine emperor. The son-in-law of Emperor Nicephorus I, Michael Rangabe was proclaimed emperor on Oct. 2, 811, by the army and senate, to replace his dying brother-in-law Stauracius, who had succeeded Nicephorus as provisional emperor. Michael proved to be an ineffectual ruler, more interested in protecting the veneration of icons from critics than in matters of state.

Michael recognized Charlemagne’s claims to an imperial title in return for the restoration of Adriatic lands that Charlemagne had seized. After rejecting Bulgarian peace offers in 812, Michael was defeated in the Battle of Versinikia in June 813 when part of his army refused to support him. He was deposed and banished.

**MICHAEL II** (died 829), Byzantine emperor. Born in Amorium, Phrygia, in Anatolia, he rose from the lowest army ranks to become commander of the guards and the close friend of Leo the Armenian.

Some years after the latter had become emperor as Leo V in 813, he had Michael arrested for treason. Michael’s followers assassinated Leo on Dec. 25, 820, and placed Michael on the throne, as the first of the Phrygian dynasty.

Though sympathetic with the iconoclasts in the religious turmoil of the day, Michael dealt flexibly with the divisive issue of the icons. During his reign the empire was under constant attack, particularly by the Muslims, who seized Crete and began the occupation of Sicily. Michael's forces were tied down by a widespread revolt led by Thomas the Slav. Thomas' siege of Constantinople, begun in December 821, was finally ended with the help of the Bulgars, usually enemies of the Byzantines. Michael was succeeded by his son Theophilus.

**MICHAEL III** (836?–867), Byzantine emperor. A grandson of Michael II, he succeeded to the throne on the death of his father, Theophilus, in 842. His mother, Theodora, established a regency, which included her brother Bardas and the logothete Theoctistus. In time, Theoctistus gained total ascendancy over Theodora. During the regency the iconoclastic controversy was finally decided in favor of orthodoxy. In 856 the regency was overthrown by Bardas and Michael, whose mother had denied him any role in governing the state. Theoctistus was murdered and Theodora banished to a convent.

Though Michael (who was disparaged as the "drunkard" by later historians) sometimes led his armies, the great accomplishments of his reign, including the conversion of many Slavs to Christianity, were the work primarily of Bardas, who had been named caesar, and Photius, who became patriarch in 858. Michael was unable to stem Arab encroachments in Sicily and southern Italy, but he met with considerable military success on his eastern borders.

Michael raised his favorite, the peasant Basil the Macedonian, to high office. Basil murdered Bardas in 865, was named coemperor in 866, and killed Michael and ascended the throne in 867.

**MICHAEL IV** (died 1041), Byzantine emperor. A peasant from Paphlagonia, Anatolia, he succeeded in attracting the middle-aged empress Zoë, whose husband, Romanus III, conveniently died with suspicious suddenness on April 11, 1034. The young Michael married the empress on the same day and ascended the throne as Michael IV.

Although Michael served as both ruler and military commander, he suffered from epilepsy and turned over real power to his brother John. After suppressing a rebellion of the Slavs, Michael died in Constantinople on Dec. 10, 1041.

**MICHAEL V** (died after 1042), Byzantine emperor. Michael, known as Calaphates, was appointed caesar late in his uncle Michael IV's life. He became emperor on his uncle's death on Dec. 10, 1041. Michael exiled his powerful uncle John, but when he also exiled Zoë, the late emperor's wife, the public reacted with violence. On April 20, 1042, Michael was deposed and blinded. He was sent to a monastery, where he died.

**MICHAEL VI**, 11th century Byzantine emperor. Known as Stratioticus, Michael was a retired official when the dying empress Theodora chose him as her successor. Succeeding to the throne in September 1056, he earned the enmity of the military by denying them a share of the imperial largesse. A general, Isaac Comnenus, was hailed by his followers as emperor and marched on Constantinople. Michael was overthrown and retired to a monastery in September 1057.

**MICHAEL VII** (1059–1078), Byzantine emperor. The eldest son of Emperor Constantine X of the Ducas family, Michael ruled from 1067 to 1071 under the regency of his mother, Eudocia, and Romanus IV, whom she had married after the death of Constantine. When the Seljuk Turks captured Romanus at the Battle of Manzikert in 1071, Michael seized the throne in his own name and had Romanus blinded upon his release.

Michael was unable to stop the Seljuks from establishing themselves in eastern Anatolia or to prevent the last Byzantine holdings in Italy from falling to the Normans. He was deposed in 1078 and died that year in Ephesus.

**MICHAEL VIII** (c. 1224–1282), Byzantine emperor and founder of the Palaeologan dynasty. Of aristocratic stock, Michael Palaeologus held various commands in the Empire of Nicaea before falling under suspicion of treason. He fled to the Seljuk Turks and then returned to the Nicaean emperor to ask forgiveness when an alliance with the Seljuks against Nicaea failed to materialize.

In 1258 the seven-year-old John IV Lascaris ascended the throne, and Michael was appointed regent. Within the year he rose to coemperor. His first task was to destroy the Latin Empire of Constantinople, which had been established by the Franks in 1204. At the time of Michael's coronation, the Latin empire had shrunk to Constantinople and its environs. Michael's forces easily occupied Constantinople on July 25, 1261, and Michael was reconfirmed as emperor there on August 15. His baby son was named heir, and John IV was blinded and deposed.

Michael's outstanding diplomatic gifts were needed to defend the reestablished Byzantine Empire, particularly against Charles I, who became the Angevin king of Naples and Sicily in 1266. To prevent the papacy from supporting Charles, Michael resurrected the idea of the union of the Roman and Byzantine churches. On July 6, 1274, Michael agreed at the Council of Lyon to acknowledge the primacy of Rome and the Roman faith. The papacy, which sought only union and not, as Charles of Anjou had wished, the destruction of the Byzantine Empire, withdrew its support from Charles. But in 1281, Charles secured the election of Martin IV as pope. Obedient to Charles' wishes, Martin declared Michael a schismatic, which in effect permitted Charles to attack Michael's empire at will.

Denounced by his own subjects for betraying orthodoxy, Michael nevertheless persevered in his defense of the empire. Aided by Michael's financial support, the Sicilians revolted against their Angevin masters in the so-called Sicilian Vespers in 1282, and Peter of Aragón, with Michael's encouragement, took the Sicilian throne from Charles. Michael died shortly after this triumph, on Dec. 11, 1282.

**MICHAEL IX** (c. 1277–1320), Byzantine co-emperor and heir apparent to his father, Andronicus II. Michael tried to stem the Turkish advance in Anatolia, first with his own troops and then with the aid of the mercenary Catalan Grand Company, led by Roger de Flor. When Roger began to pillage the Byzantines, Michael had him murdered in 1305. The enraged Catalans defeated Michael at Aprus later that year. Michael died in Salonika on Oct. 12, 1320, as differences between his father and his son threatened to lead to civil war.

**MICHAEL** (1921– ) was twice king of Rumania. He was born in Sinaia, Rumania, on Oct. 25, 1921, the son of Crown Prince Carol of Rumania and Princess Helen of Greece. Michael (Rumanian, Mihai) became crown prince when his father renounced his rights to the throne in 1925 and went into exile. When King Ferdinand I, Michael's grandfather, died on July 20, 1927, Michael became king under a regency. But Carol returned to Rumania in 1930 and assumed the crown.

Michael again became king in 1940, when his father was forced to abdicate by a pro-Axis government. Greatly influenced by his mother, Michael was little more than a figurehead until 1944, when he helped Rumania to shift its support from the Axis to the Allies. The postwar Communist government obliged him to abdicate in 1947, and he went into exile.

**MICHAEL** (1596–1645), czar of Russia and founder of the Romanov dynasty. Mikhail Fyodorovich Romanov's father was Fyodor Nikitich Romanov, a cousin of Czar Fyodor I (ruled 1584–1598), and his mother was Ksenia Shestova. To end the so-called Time of Troubles, a period of anarchy that followed the death of Czar Boris Godunov in 1605, an assembly (*zemski sobor*) in 1613 offered the crown to Michael, who was in hiding in a monastery near Kostroma. Michael was crowned on July 21, 1613.

The young czar was physically weak and lacked character. The government at first was largely in the hands of his mother and her relatives. In 1619 his father, who had been forced by Boris Godunov to become a monk, returned from Polish captivity and, as Filaret, was made patriarch. Named coruler with Michael, he was the dominant figure in Russia until his death in 1633. Thereafter the relatives of Michael's mother resumed their control of the government.

During his reign domestic order was partially restored. Both Poland and Sweden recognized the czar as Russia's legitimate ruler. Taxation became increasingly onerous, and the peasantry was gradually reduced to the level of serfdom. Michael died on July 23, 1645.

**MICHAEL** (1823–1868), prince of Serbia. Michael Obrenovich (Mihailo Obrenović) was born in Kragujevac, Serbia, on Sept. 4, 1823. The son of Miloš, founder of the Obrenovich dynasty, Michael succeeded his brother Milan as ruling prince of Serbia in 1839. He was deposed in 1842 by forces supported by the regency and the Turkish and the Russian governments. Alexander Karageorgevich, who replaced him, ruled until 1858, when Michael's father, Miloš, was restored to the throne. On the death of Miloš in 1860, Michael again became ruler.

Michael was well educated and widely traveled. He proved to be a capable autocratic ruler. In foreign affairs he negotiated with neighboring states and principalities under Turkish domination to form a league to overthrow Ottoman suzerainty in the Balkans. With the support of the great powers he obtained the withdrawal of all Turkish troops from Serbia in 1867. In internal affairs he established a standing army and issued a new constitution that strengthened his role at the expense of the national assembly and the senate. On May 29, 1868, Michael was assassinated near Belgrade. It is not known for certain who was responsible for this act of violence.

**MICHAEL CERULARIUS**, sēr-ōō-lār'ē-əs (died 1058), was a patriarch of Constantinople who contributed to the Great Eastern Schism. Of good family and trained for a civil career, Cerularius was implicated in a plot to overthrow Emperor Michael IV. Becoming a monk, he was soon named patriarch by the weak new emperor Constantine IX in 1043. As head of the cultivated Greek church claiming to maintain early Christian traditions, he hated what Greeks considered the innovations and barbarous ways of the Latin church, particularly its claim, forcefully asserted by the reform pope Leo IX, to Roman primacy.

Trouble flared over church usages in southern Italy and Constantinople. When papal legates to Constantinople issued a bull excommunicating Cerularius, he called a synod in 1054, which excommunicated them. These actions made more pronounced the longstanding alienation or "schism" between East and West. Also insistent on the supremacy of church over state, the popular but uncompromising Cerularius eventually overstepped himself. He was deposed by Isaac I Comnenus, whom he helped to power in 1057, and died shortly thereafter. See also GREAT EASTERN SCHISM.

**MICHAELIS**, mi-khā-ā'lis, **Leonor** (1875–1949), German-American chemist, who made important contributions to the knowledge of the properties of enzymes and proteins. He was born in Berlin, Germany, on Jan. 26, 1875. After receiving his doctorate in medicine from the University of Berlin in 1896, he worked for various medical institutions, including Johns Hopkins University (1926–1929) and the Rockefeller Institute for Medical Research (1929–1940). He died in New York City on Oct. 9, 1949.

In 1913, Michaelis developed an equation that described how the rate of an enzyme-catalyzed reaction varied with the concentration of the substance taking part in the reaction. This is known as the Michaelis-Menten equation. Earlier, he discovered the Janus green stain, which is useful for microscopic studies of certain cell structures. Later, he discovered that keratin, a protein of the hair, is soluble in thioglycolic acid. This made it possible for women to do cold-wave permanent hairstyling at home.

**MICHAELMAS**, mik'əl-məs, a feast honoring Saint Michael, is celebrated on September 29. In the Roman Catholic Church, since the calendar reform of 1969, the feast also honors the other archangels, Gabriel and Raphael. In the Anglican Church it honors Michael and all the angels.

In England, Michaelmas is one of the four traditional quarter days, and its name designates a quarterly court term (October 12 to December 21) and academic terms at Oxford (October 1 to December 17) and Cambridge (October 1 to December 19). At one time English civil magistrates were elected at Michaelmas, which may have been in allusion to Michael as the prince of guardian angels.

A Michaelmas custom in England was the eating of roast goose, traditional from the 15th century or earlier. According to an old English proverb, one who eats goose on Michaelmas Day will not lack money all the year. The custom probably derived from the practice of tenants giving their landlords geese at Michaelmas.

**MICHEL, Claude.** See CLODION.

**MICHELANGELO**, mik-əl-an'jə-lō (1475–1564), Italian sculptor, painter, architect, engineer, and poet, personified the highest aspirations of the Renaissance. Dominating Italian art for 60 years, he summed up all the artistic discoveries of the 15th and early 16th centuries and determined their future directions. Both devout and exceptionally learned, he sought to combine traditional Christian beliefs with the classical ideals revived in the new philosophy of humanism. His volcanic spirit experienced an equal passion for physical and spiritual beauty, thus embracing both the humanist emphasis on the whole man and the Christian concern for his soul.

#### LIFE

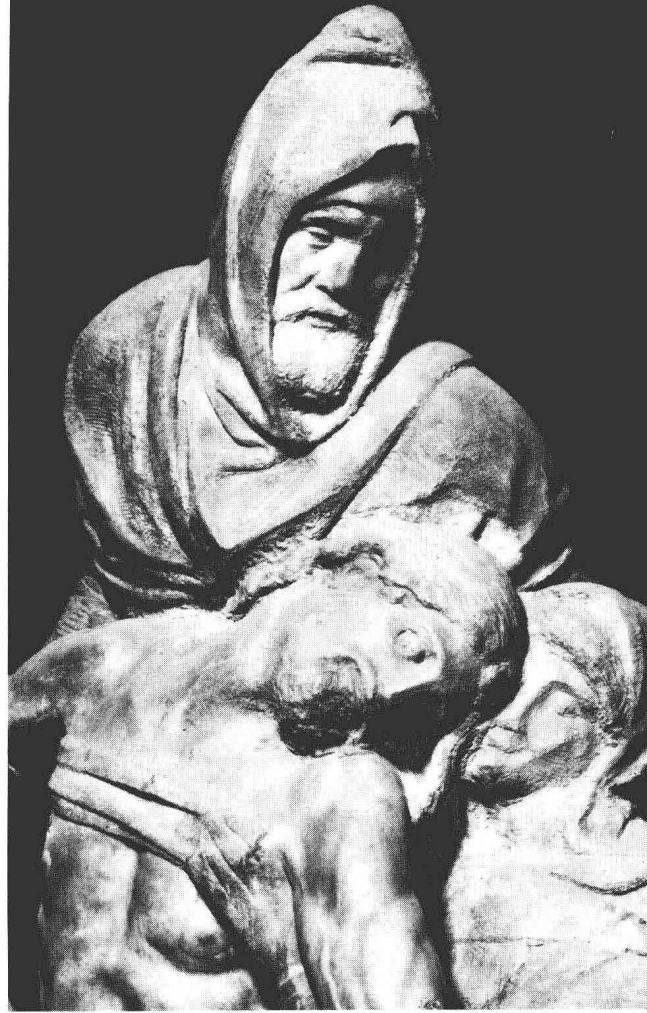
**Early Years.** Michelangelo di Buonarroti Simoni was born on March 6, 1475, in the Tuscan village of Caprese, where his father, Lodovico, was temporarily mayor. Because his mother, who died early, was frail, Michelangelo was raised chiefly in the family of a stonemason at Settignano. His older brother being destined for the church, Michelangelo inherited his responsibilities. After his father remarried in 1485, the boy joined the family in Florence and finally began school.

Florence at that time was rich and powerful, and graced with a new cathedral, churches, and palaces adorned with sculptures by Donatello, Ghiberti, and Verrocchio and with paintings by Giotto, Masaccio, Fra Angelico, and Botticelli. Michelangelo began to sketch these works. He spent time with art students, such as Francesco Granacci, who smuggled drawings out of his master's workshop for his friend to copy. Lodovico, clinging to impoverished nobility, was aghast at his son's announced desire to learn a "trade." After three years of arguments and thrashings, he reluctantly apprenticed the boy to Granacci's master, the muralist Ghirlandaio, in 1488.

In 1489, Ghirlandaio sent the two boys to the Medici gardens, where Lorenzo the Magnificent, patron of art and scholarship and unofficial ruler of Florence, had established a school for artists. There under Bertoldo, a pupil of Donatello, Michelangelo learned the rudiments of sculpture. For two more years he lived in the Medici palace, absorbing the neoplatonist doctrines of outstanding humanists and classical style from Lorenzo's fine art collection. During this period he produced his first two sculptures, reliefs of the Christian *Madonna of the Stairs* and the classical *Battle of the Centaurs* (both Casa Buonarroti, Florence).

**Rise to Fame—Flight from Florence.** After Lorenzo's death in 1492, Michelangelo returned to his father's house. Eager to learn more about anatomy, he dissected corpses supplied by the hospital of the Convent of Santo Spirito, for whose prior he carved a wooden crucifix. He also worked on a large marble *Hercules* (now lost).

Florence, meanwhile, was reflecting the growing European demand for moral reform. The Dominican friar Savonarola preached repentance so powerfully that the citizenry expelled the Medici and looted their palace. Michelangelo fled to Venice and then to Bologna, where he was soon commissioned to make three small figures for the tomb of St. Dominic. The *Kneeling Angel* has the compact breadth of the *Battle of the Centaurs*, and the *St. Proculus* much of the zeal of Donatello's *St. George*. The swinging lines of the *St. Petronius* suggest the reliefs by Jacopo della Quercia on the doors of San Petronio.



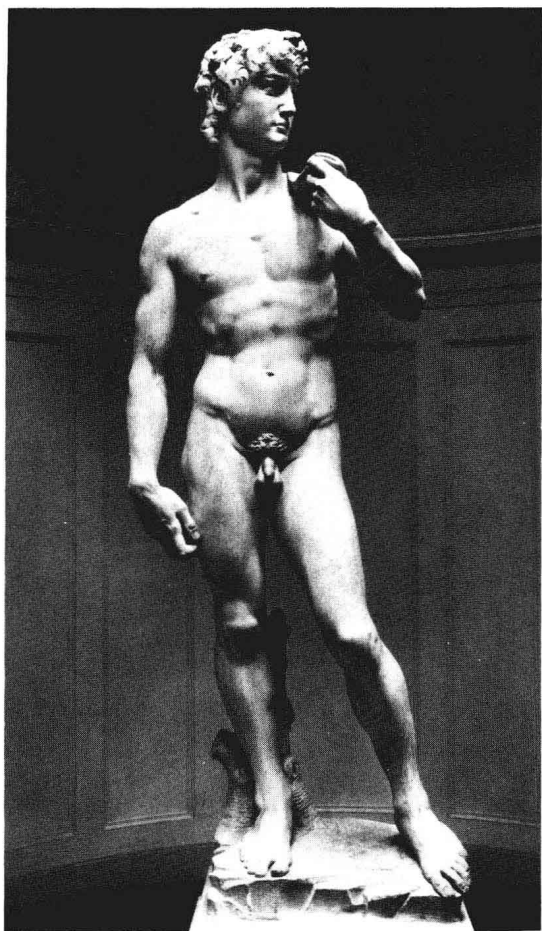
ALINARI-SCALA

Michelangelo carved the *Florence Pietà* (1547–1555), symbol of grief for the dead Christ, for his own tomb.

Returning to an austere Florence in 1495, he carved only two figures (now lost)—a young *St. John the Baptist* and a *Sleeping Cupid* based on an ancient original and suitably weathered.

**First Roman Period.** Michelangelo sold the *Cupid* to a dealer for 30 ducats, but on learning that the dealer had asked 200 ducats from a Roman cardinal, who had then discovered the deception, he went to Rome to reclaim his work. He stayed there five years. For the banker Jacopo Galli he carved the life-sized wine god *Bacchus* (1496–1498; Bargello, Florence), treated not as a drunken sot but as the Greek god of death and rebirth, inspired by wine. Galli persuaded a French cardinal to order the *St. Peter's Pietà* (1498–1500; St. Peter's, Rome), a young mother holding her dead son. It was the Vatican's main attraction at the 1964 New York World's Fair.

**Success in Florence.** In 1501, Michelangelo returned to Florence at the invitation of the city, which had burned Savonarola in 1498 and was now anxious to reestablish its patronage of the arts. It commissioned him to turn a 13-foot (4-meter) block of marble, abandoned by two previous sculptors, into a figure for the outside of the cathedral. Michelangelo worked on the project for three years in the secrecy of a locked shed, arousing much public curiosity. When the



ALINARI-SCALA

The highly polished *David* (1501–1504) presents a biblical figure as an ideally formed classical hero.

*David* (1501–1504; Accademia, Florence, since 1873) was triumphantly installed in front of the Palazzo della Signoria, where it could be more readily seen, it earned him 770 lire and wide praise.

During these years Michelangelo also worked on a bronze *David* and produced in marble the dignified yet charming *Madonna of Bruges* (Notre Dame, Bruges). In the reliefs of the *Pitti Madonna* (Bargello) and the *Taddei Madonna* (Royal Academy, London) and the painted *Doni Madonna* (Uffizi, Florence) he mastered the difficulties of composing in a *tondo*, or circular frame, and introduced the theme of the infant Saint John linking the infant Christ to the world. Five nude youths in the background of the *Doni Madonna*, symbolizing unenlightened, pre-Christian humanity, are an astonishing forecast of the “enlightenment” theme of the Sistine Ceiling.

On a much grander scale was his cartoon for the *Battle of Cascina* (1504–1505; now lost) intended to adorn the Palazzo Vecchio as the companion piece to Leonardo’s *Battle of Anghiari*. Neither huge fresco was executed, but the cartoons were the talk of Italy. Hundreds of artists copied the variously posed bathing nude soldiers in Michelangelo’s drawing, calling it the “School of the World.”

**Serving the Warrior Pope.** In 1505, Pope Julius II invited Michelangelo to Rome. A refusal was virtually impossible, for the warlike Julius was also the most important patron of the arts in Eu-

rope. An incongruous pair in age, dress, manners, and station, the two men were temperamentally alike—restless, dynamic, interested in large ideas. Julius requested a design for a gigantic tomb.

**The Tragedy of the Tomb.** Forty years would pass and six contracts be written before the tomb of Julius was finished, and Michelangelo would lament: “I have lost all my youth chained to this tomb.” Unable to foresee the future, however, he designed a huge, three-tiered, many-figured monument and spent the winter in the quarries at Carrara selecting the best marble.

Soon after, however, Julius decided to tear down the old St. Peter’s and have Bramante build a bigger church to house the tomb. Short of funds for both projects, the pope stopped payments on the tomb. Believing himself the victim of a plot against his life by Bramante and his nephew Raphael, Michelangelo fled to Florence. Julius, furious, threatened Florence with war. The sculptor delayed as long as he dared. Then, at Julius’ order, he journeyed to Bologna, which Julius had just conquered, and begged and won forgiveness.

Julius then demanded an enormous bronze statue of himself as victor to be set over the door of the cathedral. Because of casting problems, the work took more than a year. At war again in 1511, Bologna toppled and sold the statue, which was recast as cannon for use against the pope.

**“Foul I Fare and Painting Is My Shame.”** Thus Michelangelo described his next assignment. Julius ordered him back to Rome as a painter to fresco the ceiling of the Sistine Chapel. Insisting helplessly that he was a sculptor, Michelangelo undertook the enormously difficult task.

The ceiling arched 67 feet (21 meters) over a floor area of 5,640 square feet (1,720 square meters). For the subject, Julius suggested the Twelve Apostles. Instead, Michelangelo produced an elaborate composition involving 343 colossal figures from the Bible and classical times, which required four years (1508–1512) to execute. He spent several months each year preparing detailed designs and traveling to the battlefields to obtain money from his patron. He painted only during the hot, dry summer, lying on his back on the high scaffolding while the dripping paint and fresh plaster made a “pavement” out of his face, as he wryly described it. Contrary to the legend that he worked alone, he was assisted by a succession of Florentines. Meanwhile, Julius raged impatiently and once threatened to throw him off the scaffold for not working faster. Yet when the task was done, the artist could write his father, “The Pope is well satisfied.”

**Glorifying the Medici in Florence.** From 1513 to 1534, Michelangelo served the Medici popes, Lorenzo the Magnificent’s son Giovanni (Leo X) and bastard nephew Giulio (Clement VII). These were his most frustrating and dangerous years.

**The “Lost Years.”** Despite their earlier association in the Medici palace, the ascetic Michelangelo found little in common with the sybaritic Leo, who looked on him as his “conscience” and kept him nominally in his service. The heirs of Julius immediately engaged the sculptor to proceed with the tomb. Between 1513 and 1516 he carved the prophet *Moses* (San Pietro in Vincoli, Rome), the *Rebellious Slave* and *Dying Slave* (both Louvre), and many architectural pieces.

Then Leo removed his “conscience” from Rome by ordering him to Florence in 1516 to

build a facade for the unfinished family Church of San Lorenzo. Michelangelo conceived a great, expansive frame for sculpture and made many trips to Carrara for marble, but Leo canceled the commission as too costly. "I have lost three years," groaned Michelangelo. "I am ruined!"

**Designing the Medici Chapel.** Leo now presented him with a new idea: tombs for his brother Giuliano, duke of Nemours, and his nephew Lorenzo, duke of Urbino, in the sacristy of San Lorenzo. Michelangelo began to rebuild the sacristy before the Medici could change their minds.

Then international politics intervened. In 1527 the troops of the invading Holy Roman emperor Charles V sacked Rome. Pope Clement VII escaped and threatened to attack Florence for deserting him. Florence thereupon turned over its defenses to Michelangelo, who despite his loyalty to and pension from Clement, strengthened the fortifications and built new ones on the strategic heights across the Arno River. For nine months he held the city against Clement's troops. Then in 1530 a traitor opened the gates. For weeks Michelangelo hid in a belfry from the vengeful Clement, who finally pardoned him and ordered him back to work on the Medici Chapel. Intimidated, he finished a classical Hades in which the figures of the dead dukes forever contemplate the *Madonna and Child*.

During these years, Michelangelo was still under pressure to finish the Julius tomb, for which he began the four *Boboli Slaves*, *Giants*, or *Captives* (1530–1534; Accademia) and the *Victory* (1532; Palazzo Vecchio). In addition, he painted two panels (now lost), *Leda and the Swan* and *Venus and Cupid*, which develop the theme of love satisfied and awakened. To appease Clement's military governor, he changed an unfinished marble *David* into an *Apollo* (Bargello). The hatred of Duke Alessandro de' Medici, new dictator of Florence; the deaths of his father and favorite brother; and his wish to join a new friend, Tommaso Cavalieri, in Rome led Michelangelo to leave Florence forever in 1534.

**The Old Master in Rome.** Michelangelo was nearly 60 when he settled permanently in Rome, in a comfortable house provided by the heirs of Julius. He was torn between obligation to the tomb and to new popes. The pious and cultivated Paul III roared, "I have waited 30 years for your services. Now I'm pope, can't I satisfy my desire?" Paul's successor, Julius III, vowed that if Michelangelo should die first, he would have him stuffed so as to keep him always at hand.

**Labors.** For Paul III, Michelangelo painted the great *Last Judgment* over the altar wall of the Sistine Chapel and the *Conversion of Saul* and *Crucifixion of St. Peter* in the Pauline Chapel in the Vatican. Work on these huge frescoes occupied 15 exhausting years (1535–1550). For the Julius tomb, finally installed in San Pietro in Vincoli in 1545, he carved the statues of *Rachel* and *Leah*. The assassination of Duke Alessandro in Florence in 1539 inspired his bust of *Brutus* (Bargello). In his last 19 years he worked on three pietàs: the *Florence Pietà* for his own tomb (1447–1555; Duomo, Florence), the *Palestrina Pietà* (Accademia) completed largely by assistants, and the unfinished *Rondanini Pietà* (1555–1564; Castello Sforzesco, Milan).

In 1547, Paul made Michelangelo architect in chief of the new, partly built St. Peter's, the greatest single project of the Renaissance. The magnificent edifice, completed after his death,



ALINARI-SCALA

A *Boboli Slave*, or *Captive* (1530–1534), just emerging from the stone block, was intended for the Julius tomb.

was predominantly his plan. Also for Paul he worked on the Farnese palace and redesigned Rome's civic center on the Capitoline Hill, or Campidoglio. He obliged Pius IV with designs for the Porta Pia and with plans (mostly lost) for the conversion of the Baths of Diocletian into the Church of Santa Maria degli Angeli.

**Friends and Enemies.** Michelangelo's sense of increasing age and his feelings of disappointment in these later years in Rome were offset by his enthusiasm for two close friends, who were alike in their gentle birth, fine intelligence, and nobility of spirit. Tommaso Cavalieri was the incarnation of youth and physical beauty that Michelangelo had tried all his life to create in the neoplatonic belief that they inspired the lover to appreciate the eternal beauty of the Divine. Vittoria Colonna had the wisdom of middle age and an intense piety that matched the deepening of his own convictions in the more serious climate of the Catholic Reformation. He enjoyed discussing with her and her brilliant, reform-minded circle such "dangerous" Protestant doctrines as justification by faith alone. He showered both friends with symbolic drawings, letters, and ardent, rough-hewn sonnets. These with other poems (published in 1623) speak with great intensity of the development of his own emotions from love of man to love of God.

Michelangelo found other good friends in the Florentine exiles Roberto Strozzi and Luigi del Riccio. In addition he had many worshipful





ALINARI-SCALA

The *St. Peter's Pietà* (1498–1500) explores technical problems of composition and finish.

young followers. His nephew, Lionardo, he scolded, commanded, and adored.

There were also enemies, although they were powerless to harm him. The satirist Pietro Aretino, attempting to blackmail him for alleged immoral friendships into a gift of drawings, was mocked by being portrayed in the *Last Judgment* as Saint Bartholomew dangling the painter's flayed skin. His rival on the St. Peter's assignment stirred up the governing board against him but was dismissed by Julius III.

Crusty and independent but in failing health, Michelangelo died in Rome on Feb. 18, 1564, shortly before his 89th birthday. Pius V insisted on a funeral in Rome, but Lionardo, following his uncle's wishes, smuggled the body to Florence, where the whole city tried to crowd into his funeral service. As a memorial it named for him the great square on the slopes below San Miniato overlooking the city he loved and defended.

**The Man.** Michelangelo was broad-shouldered, black-bearded, and, as a result of a student quarrel, broken-nosed. He served princes, cardinals, and popes, yet he lived simply, absorbed in his work. In his youth, while Leonardo and Raphael dressed in the height of fashion, he wore workmen's clothes, often sleeping in them, including his boots. He ate and drank sparingly and in old age slept little, blaming his headaches and indigestion on too much sleep.

A proud but eccentric bachelor, Michelangelo had a fiery temper and a secretive, mistrustful nature. As a young man he envied other artists' reputations and had few friends. But he had strong loyalties—to his greedy, irresponsible, and

often reckless family, the memory of Julius II, the Medici popes, Florence, and, in later years, his closest friends—and he came to be adored as the “Divine One.”

As a model man of the Renaissance, he gave his first loyalty to his own genius. He once regretted that most people “make little distinction between a man who has the tools of a painter in his hands and the much rarer individual who has genius as well.” Yet when Cardinal Farnese asked him why an old man such as he should be trudging through the snow to the Colosseum, he said simply: “To learn some more.”

Michelangelo's austere life and gruff manners made him resemble more a medieval monk than a courtly Renaissance artist, but through his frugality and seclusion he achieved two thoroughly Renaissance goals. The first was a fortune to support his father and brothers. The second was the time to ponder the relationship of man to the Divine and to conserve his remarkable energies to express his conclusions more clearly and powerfully than any other artist of his day.

#### WORK

The Renaissance produced other great artists but none who achieved such heights in all three principal media. Raphael ignored sculpture and borrowed heavily in other arts. Neither architecture nor sculpture by Leonardo has survived, and his painting expresses his own personality rather than the age. It is Michelangelo who was truly the artist of universal genius.

**Sculpture.** Michelangelo always insisted that his profession was sculpture, and he found three-dimensional qualities much more appealing than the flat surfaces of painting. His style evolved in both form and content. In his earliest works he was concerned with technical control of his medium, trying in the *Madonna of the Stairs* the very delicate low relief of Donatello and in the *Battle of the Centaurs* a broad, bold projection of his own. In the *Bacchus* and the *St. Peter's Pietà* he faced the problems of immaculate finish and in the *David* the distortions necessary for a colossus. After mastering these problems, he henceforth regarded them as secondary.

His concern with ideas, however, remained dominant all his life. At first he kept classical and Christian ideas apart, although he liked to work on both at the same time. But beginning with the *David*, which houses medieval emotion within the classical body of Hercules, he fused the two. Only in the *Rondanini Pietà* does the disembodied Christian ideal emerge as an entity.

As he grew older, Michelangelo developed certain mannerisms such as dynamic coiling in *contrapposto* (opposition of parts of the body) and an emphasis on the torso, whence the term “Mannerist style.” He also achieved a simultaneous approach to the block from all sides and an ability to conceive the figure completely within the confines of the marble.

For lack of time and interest, Michelangelo often entrusted the finishing process to assistants, with unfortunate results, as in the overly polished *Risen Christ* (1519–1520; Santa Maria sopra Minerva, Rome). But his unfinished surfaces, ever since Rodin discovered their latent possibilities, have inspired a cult for texture as such. Michelangelo has been called the greatest sculptor of all time. For skill, production, influence, and time-honored acceptance, it would be difficult to find his equal.